

**UNITED STATES DEPARTMENT OF COMMERCE****United States Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

*Handwritten signature/initials*

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/480,076 01/10/00 LAKE

R MI40-274

IM22/0824

WELLS ST JOHN ROBERTS GREGORY & MATKIN

PS

601 W FIRST AVE

SUITE 1300

SPOKANE WA 99201-3817

EXAMINER

HARAN, J

ART UNIT

PAPER NUMBER

1733

DATE MAILED:

08/24/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

# Office Action Summary

Application No.

09/480,076

Applicant(s)

LAKE, RICKIE C.

Examiner

John T. Haran

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 9-14 and 23-50 is/are pending in the application.
- 4a) Of the above claim(s) 29-50 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-14 and 23-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 9-14 and 23-28, drawn to a method of conductively interconnecting electronic components, classified in class 156, subclass 305.
  - II. Claims 29-36, drawn to a battery powerable apparatus, classified in class 429, subclass 99.
  - III. Claims 37-44, drawn to a radio frequency communication device, classified in class 235, subclass 492.
  - IV. Claims, drawn to 45-50, classified in class 228, subclass 175.

2. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions require a method of conductively interconnecting and a battery powerable apparatus.

Inventions I and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions require a method of conductively interconnecting and a radio frequency device.

Inventions I and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions require a method of conductively interconnecting and an electric circuit.

Inventions II and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions of a battery powerable apparatus and a radio frequency device are unrelated.

Inventions II and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions of a battery powerable apparatus and an electric circuit are unrelated.

Inventions III and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions of a radio frequency device and an electric circuit are unrelated.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Groups II, III, and IV, restriction for examination purposes as indicated is proper.
5. During a telephone conversation with Mark Matkin on 8/14/01 a provisional election was made without traverse to prosecute the invention of I, claims 9-14 and 23-28. Affirmation of this election must be made by applicant in replying to this Office action. Claims 29-50 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

7. Claims 9 and 11-12 rejected under 35 U.S.C. 102(e) as being anticipated by Tsukagoshi et al (U.S. Patent 5,843,251).

Tsukagoshi et al are directed to electrically connecting circuits by interposing an insulating epoxy adhesive between the two electronic components wherein the

Art Unit: 1733

adhesive is curable and includes a coupling agent (See Column 3, lines 30-35). A preferred type of coupling agent for improving the adhesiveness of the circuits is a silane coupling agent such as glycidoxypyrroltrimethoxysilane (See Column 10, line 62 to Column 11, line 11).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsukagoshi et al.

Regarding claim 10, Tsukagoshi does not teach a nickel containing metal surface. One skilled in the art would have readily appreciated that electronic components with nickel containing metal are well known and conventional and that Tsukagoshi is a general teaching for interconnecting electronic parts with an epoxy adhesive containing a silane coupling agent for improving adhesion. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the technique taught in Tsukagoshi to electrically interconnect two electronic components, one of which is a nickel containing metal surface, with an epoxy adhesive that contains a silane coupling agent.

10. Claims 13-14 and 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsukagoshi et al in view of Miszczyk et al, publication from Progress in Organic Coatings 25 (1995) 357-363.

Regarding claims 23-25, Tsukagoshi teaches connecting metal containing semiconductor chips to a substrate via an epoxy adhesive containing a silane coupling agent but is silent towards the resistance of the adhesive.

Epoxy adhesives with silane coupling agents of the desired resistance are known in the art. For example, Miszczyk teaches an epoxy with a silane additive, such as glycidoxypropyltrimethoxysilane, as an adhesion promoter (coupling agent) with the specified resistances (See Figure 5).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to use an epoxy adhesive containing a silane coupling agent with the desired resistance in the method of Tsukagoshi et al.

Regarding claims 13-14 and 26-27, Miszczyk also teaches the silane adhesion promoter having a weight percentage of 1%. It would have been obvious for the adhesive in Tsukagoshi et al to have 1 weight percent silane coupling agent.

Regarding claim 28, One skilled in the art would have readily appreciated that electronic components with nickel containing metal are well known and conventional and that Tsukagoshi is a general teaching for interconnecting electronic parts with an epoxy adhesive containing a silane coupling agent for improving adhesion. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the technique taught in Tsukagoshi to electrically interconnect two electronic

Art Unit: 1733

components, one of which is a nickel containing metal surface, with an epoxy adhesive that contains a silane coupling agent.

11. Claims 9-14 and 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tuttle (U.S. Patent 5,558,679) in view of Miszczyk et al, publication from Progress in Organic Coatings 25 (1995) 357-363 and Product Information Brochure "Information About Dow Corning Z-6040 Silane"(1996).

Tuttle is directed to a method for mounting a battery on a substrate. A curable conductive adhesive secures the battery to the substrate and establishes electrical communication between the contacts on the battery and substrate (Column 3, lines 10-20). Tuttle is silent towards using an adhesive with an epoxy terminated silane.

Miszczyk teaches that silanes are the major group of adhesion promoters. Adhesion promoters are materials which may be used to form primary bonds either to a substrate or to a coating, or to both of them, with the specific aim of improving initial and/or wet adhesion. An epoxy with a silane additive, such as glycidoxypropyltrimethoxysilane, is used as an adhesion promoter. Miszczyk does not disclose using the adhesive with the silane adhesion promoter for connecting electrical components.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the adhesive with the silane adhesion promoter of Miszczyk for the adhesive of Tuttle because it is known in the art to add silane adhesion promoters to adhesives in order to improve the adhesion and wetting properties of the



Art Unit: 1733

bond. Tuttle teaches that alternative adhesives may be used as long as they provide conductivity without shorting. Furthermore, the Dow Corning Product Brochure teaches that silanes, specifically glycidoxypyltrimethoxysilane (type used by Miszczyk), act as adhesion promoters to enhance the bonding of an adhesive to glass, metals or other polymer surface (second column of first page). The battery housing of Tuttle is metal, specifically nickel clad stainless steel (Column 3, line 61) and as noted in the Dow Corning Product Brochure would benefit from the adhesion promoter being present in the adhesive of Tuttle so that a stronger bond results.

Regarding claims 10 and 28, Tuttle teaches the battery housing is clad in nickel.

Regarding claims 11-14 and 26-27, Miszczyk teaches the claimed silane groups and a weight percentage of 1%.

Regarding claim 23-25, Miszczyk teaches the claimed resistances in Figure 5.

### ***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John T. Haran** whose telephone number is **(703) 305-0052**. The examiner can normally be reached on M-Th (8 - 5) and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on (703) 308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7718 for regular communications and (703) 305-3599 for After Final communications.

Application/Control Number: 09/480,076

Page 9

Art Unit: 1733

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

*John T. Haran*

John T. Haran

August 21, 2001

*Steven D. Maki*  
STEVEN D. MAKI 8-22-01  
PRIMARY EXAMINER  
~~GROUP 1000~~  
AU 1733